IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Docket No.: 702.124
CHILDS, MICHAEL, ET AL.	
Application No.: 10/086,370	Group Art Unit No.: 3663
Filed: February 28, 2002	
SYSTEMS, FUNCTIONAL DATA, AND METHODS TO PACK N-DIMENSIONAL DATA	Examiner: MANCHO, RONNIE M.

APPEAL BRIEF

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APPELLANTS' BRIEF ON APPEAL

In response to the Office Action dated May 16, 2006, and the Notice of Appeal dated July 5, 2006, Appellants' Brief on Appeal in accordance with 37 C.F.R. § 41.37 is hereby submitted. The Examiner's final rejections of claims 1-12 and 25-32 are herein appealed, and allowance of said claims is respectfully requested.

Appellants previously paid the Appeal Brief fee on August 24, 2005. As the Examiner reopened prosecution before Appellants' previous appeal was heard by the BPAI, no fee is due for this brief. However, should any fee be due, the Commissioner is hereby authorized to charge $500.00, the amount of the filing fee for this Appeal Brief, or any additional fees which may be required, or credit any overpayment, to Account No. 501-791.

Respectfully submitted,

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Following are the requisite statements under 37 C.F.R. § 41.37:

I. Real Parties in Interest

Michael Childs and Darin Beesley are the inventors of the claimed inventions. Mr. Childs and Mr. Beesley assigned the present application to Garmin Ltd., the Real Party in Interest.

II. Related Proceedings, Appeals and Interferences

No related proceedings, appeals, or interferences are known to the Appellants that may directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-12 and 25-32 are pending, rejected, and herein appealed, with claims 1, 9, and 25 being independent and claims 13-24 being previously canceled.

IV. Status of Amendments

All amendments submitted by the Appellants have been entered. No amendments were filed subsequent to the Office action of May 16, 2006.

V. Summary of Claimed Subject Matter

The embodiment of claim 1 is generally directed at a navigation device that includes a processor (page. 11, line 1); a memory (page 11, line 5); a display (page 11, line 7); and compression and decompression instructions (page 13, lines 17-24). The

compression and decompression instructions are operable to be used by the device to compress coordinate data into reduced sizes relative to original sizes of the coordinate data (page 16, line 22, through page 17, line 22). The compression and decompression instructions are also operable to associate activation data with coordinate data (page 17, lines 23-25), where the coordinate data has three or more dimensions (page 17, lines 14-22), and each portion of the activation data identifies one of the three or more dimensions (page 17, line 23, through page 18, line 16; page 19, lines 11-18).

The activation data is used to identify which dimensions are in use by the navigation device, and thus which dimensions should be compressed or decompressed (page 17, line 23, through page 18, line 9). Such a configuration advantageously allows embodiments of the present invention to limit the use of processing and memory resources by compressing and decompressing only the coordinate data dimensions that are currently being used by the device.

The embodiment of independent claim 8 includes similar features to that of claim 1, and generally includes a mass storage device (page 19, line 1); a server (page 19, line 1); and compression and decompression instructions embedded on a navigation device (page 17, line 23, through page 18, line 16; page 19, lines 11-18). The compression and decompression instructions function as discussed above.

The embodiment of independent claim 25 includes similar features to that of claims 1 and 8. In particular, independent claim 25 recites compression and decompression instructions embedded in a processor (page 13, lines 17-24); a processor and memory (page 11, lines 1-10); and a GPS receiver (page 11, lines 1-5). The compression and decompression instructions function as discussed above.

Appellants also note that the page and line numbers cited above are for reference purposes only and should not be taken as a limitation on the support for, or scope of, the claimed subject matter. Support for the claimed subject matter may be found throughout the specification and drawings and the page and line numbers cited above merely refer to exemplary portions of the specification.

VI. Grounds of Rejection to be Reviewed on Appeal

1. Claims 1-12 and 25-32 were rejected under 35 U.S.C. § 112 first and second paragraphs for not being definite, enabled, or supported by the specification.
2. Claims 1, 2, 6-12, and 25-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ito et al. (U.S. Patent No. 6,484,093) in view of Friederich et al. (U.S. Patent No. 6,600,841).
3. Claims 3-5 were rejected under U.S.C. § 103(a) as being unpatentable over Ito and Friederich in further view of Robinson et al. (U.S. Patent No. 5,995,970).

VII. Argument

The Examiner rejected all pending claims under § § 112 and 103. As is discussed at length below, the Examiner's § 112 rejections are without merit as all claimed features are clearly supported and enabled by the specification and have a scope that is readily ascertainable by those skilled in the art. The Examiner has also failed to establish a *prima facie* case of obviousness for his § 103 rejections as no combination of the

Examiner's cited references discloses or suggests compressing coordinate data using activation data.

A. The Examiner's rejections under § 112

The May 16, 2006, Office action included a multitude of rejections under § 112. Many of the § 112 rejections were presented for the first time in the May 16, 2006, Office action—despite the fact that the Examiner had issued five previous Office actions without finding various claim elements indefinite or lacking support in the specification. Several of the Examiner's § 112 rejections also appear to be accidentally included within the May 16, 2006, Office action, apparently the result of over-zealous cutting-and-pasting from previous Office actions. Each of the Examiner's § 112 rejections is addressed below.

1. The applicable law under § 112

i. The written-description requirement

The first paragraph of 35 U.S.C. § 112 requires that the specification contain a written description of the claimed invention. This requirement is separate and distinct from the enablement requirement. *Vas-Cath, Inc. v. Mahurkar,* 935 F.2d 1555, 1560, 19 USPQ2d 1111, 1114 (Fed. Cir. 1991). To satisfy the written description requirement, the specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003).

There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. *In re Wertheim*, 541 F.2d 257, 263,

191 USPQ 90, 97 (CCPA 1976). A specification that describes all aspects of the claimed invention with sufficient particularity, such that one skilled in the art would recognize that the applicant had possession of the claimed invention, satisfies the written description requirement. *See* MPEP § 2163(I)(A).

The examiner has the initial burden, after a thorough reading and evaluation of the content of the application, of presenting evidence or reasons why a person skilled in the art would not recognize that the written description of the invention provides support for the claims. *See* MPEP § 2163. In rejecting a claim for lack of written description, the examiner must set forth express findings of facts that support his or her conclusion. *See* MPEP § 2163(III)(A).

ii. Enablement

35 U.S.C. § 112, first paragraph, requires that the specification describe how to make and use the claimed invention. Detailed procedures for making and using the invention may not be necessary if the description of the invention itself is sufficient to permit those skilled in the art to make and use the invention. MPEP § 2164; see also *CFMT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1338, 68 USPQ2d 1940, 1944 (Fed. Cir. 2003). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991).

A claimed invention is enabled when one reasonably skilled in the art could make or use the invention from the applications' disclosure—and information known in the art— without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988).

The factors for determining whether or not the practice of a claimed invention requires undue experimentation, include but are not limited to: the breadth of the claims; the nature of the invention; the state of the prior art; the level of one of ordinary skill; the level of predictability in the art; the amount of direction provided by the inventor; the existence of working examples; and the quantity of experimentation needed to make or use the invention based on the content of the disclosure. *In re Wands,* 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). The determination that "undue experimentation" would have been needed to make and use the claimed invention is not a single, simple factual determination; it is a conclusion reached by weighing all the above noted factual considerations. *In re Wands,* 858 F.2d at 737.

iii. Definiteness

35 U.S.C. § 112, second paragraph, requires that the claims particularly point out and distinctly define the metes and bounds of the claimed subject matter. A claim satisfies this definiteness requirement when the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art. MPEP § 2171.

A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers and may use functional language, alternative expressions, negative limitations, or any style of expression or format that makes clear the boundaries of the subject matter for which protection is sought. MPEP § 2173.01.

In reviewing a claim for definiteness, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, provides a clear warning to others as to what constitutes infringement of the patent. *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). Accordingly, a claim term that is not used or defined in the specification is not indefinite if the meaning of the claim term is discernible. *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.,* 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004)

2. All pending claims are properly enabled

i. Independent claims 1, 9, and 25

In the May 16, 2006, Office action, the Examiner rejected all pending claims for failing to be properly enabled. The Examiner's enablement rejections of independent claims 1, 9, and 25 are generally based on the recited "compress a plurality of coordinate data into *reduced sizes relative to original sizes of the coordinate data*" language (May 16, 2006, Office action, page 2). The Examiner's rationale for concluding that this claimed feature is not enabled is as follows-

> Applicant's invention is drawn to packing and unpacking data and not to compressing data into reduced sizes. The examiner is unaware of a compression technique that compresses coordinate data into "reduced sizes relative to original sizes of the coordinate data." If applicant is aware of any prior art that teaches such a technique, then application is requested to submit such art.

Appellants' independent claims, including the feature of compressing data "into *reduced* sizes relative to original sizes" of the data, are fully enabled by specification.

In particular, as should be appreciated by those skilled in the art, data compression is the reduction of the size of data. Appellants' specification is replete with discussions of data compression, including the associated packing and unpacking of data (page 4, lines, 11-13, 18-21; page 15 line 2; page 17 lines 3-11; page 19 lines 9-17; page 20 lines 8-17; page 22 lines 2-11; page 25, lines 11-13). These cited portions, and others, fully enable one skilled in the art to compress (pack) data as recited in the independent claims without undue experimentation. Decompression (unpacking) of data is similarly enabled by Appellants' specification.

The Examiner argued that if the above is true, then Appellants' claims are not enabled because the specification does not expressly disclose the exact sizes to which data may be compressed (May 16, 2006, Office action, page 17). Appellants note that those skilled in the art, without any degree of undue experimentation, would be able to practice the claimed invention to compress data from any original size to any reduced size. Using the teachings of the present application, it is entirely within the knowledge of those skilled in the art to select desired compression and packing algorithms to compress data as recited in the claims. Appellants are not required to expressly disclose at the Examiner's whim all possible compression and packing algorithms, and their resulting efficiency, which may be partially used by all embodiments of the claimed invention. *In*

re Buchner, 929 F.2d 660 at 661 (a patent need not teach, and preferably omits, what is well known in the art)[1].

The Examiner's confusion regarding the compression provided by embodiments of the present invention appears to stem from his contention that "packing" data is not compression (May 16, 2006, Office action, page 3). Appellants' specification is clear that embodiments of the present invention may pack and unpack data for compression purposes (page 4, lines 15-22; page 17, lines 1-17, etc). Further, those skilled in the art understand that "packing" is a synonym for compression[2].

The Examiner's argument that Appellants' specification somehow teaches away from packing data for compression purposes is not supported by logic or the specification. The specification, including the numerous portions cited above, is clear that data may be compressed by packing. The specification is also clear that the processor, memory, and instructions may be used to compress the data. Thus, the Examiner's argument that one cannot use a processor and memory to compress data is without merit.

Consequently, all independent claims of the present application are fully enabled as Appellants' specification would enable one skilled in the art to compress (pack) data as recited in the claims without undue experimentation. Appellants also note that in rejecting claims 1, 9, and 25 for lack of enablement, the Examiner failed to weigh any of

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1 Appellants note that the claimed compression features are not known in the art, but assert that by using the teachings of the present application, one skilled in the art would be able to practice the claimed invention due to the general knowledge in the art that compressing/packing data reduces the size of the data.

2 http://en.wikipedia.org/wiki/Packing ("In computer science, packing is sometimes used as a synonym for compression"); see also the "Meridian Lossless Packing (MLP)" compression format commonly used in audio environments (http://www.meridianaudio.com/).

the *Wands* factors and instead arbitrarily reached his conclusion—in violation of Federal Circuit precedent. *In re Wright*, 999 F.2d 1557 at 1562; *In re Wands,* 858 F.2d at 737.

ii. Dependent claim 3

The Examiner appears to reject claim 3 for not being enabled as claim 3 recites "the coordinate change is identified as a desired size for which to compress each coordinate data" (May 16, 2006, Office action, page 3). In particular, the Examiner contends that it is not clear what the "desired size" is[3].

The Examiner fails to provide any reasoning for why one skilled in the art would be unable to construct or use the device of claim 3 without undue experimentation. Instead, as is clearly evident from the specification, one skilled in the art would be able to practice the invention of claim 3 as the "desired size" corresponds to the amount of compression for the coordinate data. Specifically, one skilled in the art could compress data as recited in claim 3 to any desired size without any amount of undue experimentation, as discussed in the preceding section.

Further, the recited "desired size" is not indefinite as it corresponds to the amount the coordinate change value is compressed—a value that is readily ascertainable by those skilled in the art.

iii. Dependent claim 4

The Examiner rejected dependant claim 4 for "not being clear in scope[4]" (May 16, 2006, Office action, page 3). The Examiner provides no analysis or reasoning for how

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[3] Appellants note that this is appears to be a rejection under § 112, ¶ 2, and not actually a rejection based on enablement.

[4] Appellants note that although the Examiner identifies this rejection as an enablement rejection, it is more appropriately a rejection under 35 U.S.C. § 112, ¶ 2.

claim 4 is not enabled or definite. The MPEP, the Federal rules, and the Administrative Procedure Act do not support such arbitrary and capricious examination, and the Examiner is required to provide reasons for why claim 4 is indefinite or not enabled. Various portions of the specification, including the portions cited above, enable dependent claim 4. Claim 4 is similarly definite in scope as scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art.

iv. Dependent claim 12

The Examiner rejected dependant claim 12 for not being supported by the specification[5]. Dependent claim 12 recites "wherein the navigation data are compressed within the memory." This claimed feature is clearly recited in the specification at several locations. As one example, page 18, lines 3-5, states "the coordinate data 640 is packed or compressed in the memory 620 . . ." One skilled in the art would be able to practice the system of claim 12 based on this disclosure, and various others, without any degree of undue experimentation. Further, the specification fully evidences Appellants' possession of the claimed invention at the time of filing.

v. Dependent claims 27-32

The Examiner rejected claims 27-32 for not being enabled by the specification. The Examiner provides no analysis or reasoning for how claims 27-32 are not enabled or definite. The MPEP, the Federal rules, and the Administrative Procedure Act do not support such arbitrary and capricious examination, and the Examiner is required to provide reasons for why claims 27-32 are indefinite or not enabled. Various portions of the specification, including the portions cited above, enable dependent claims 27-32.

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[5] Appellants note that this appears to be a rejection for lack of written description support, and not an enablement rejection as stated by the Examiner.

3. Claim 25 satisfies the written description requirement

The Examiner rejected independent claim 25 for failing to comply with the written description requirement. In particular, the Examiner contends that the recited "three or more dimensions" are not disclosed in the specification. This claimed feature is clearly shown at numerous locations in the specification, and in particular at page 4, lines 5-8 ("[e]ach coordinate data has three or more dimensional data"); page 7, lines 2-19; page 17, line 9; page 19 lines 8-10; and page 20, lines 22-25 ("dimensions can include one or more data indicative of longitudinal data 871, latitudinal data 872, depth data 873, altitudinal data 874, bottom condition data 875, marine data 876, aeronautical data 877, landmark data 878, and others"). Thus, the recited phrase "three or more dimensions" is clearly disclosed and supported by the specification.

4. All pending claims are properly definite

The Examiner rejected all pending claims for being indefinite under 35 U.S.C. § 112, ¶ 2.

i. Independent claims 1, 9, and 25

The Examiner rejected independent claims 1, 9, and 25 as being indefinite because the claimed feature of compressing data to "reduced sizes relative to original sizes of the coordinate data" is not disclosed in the specification or drawings[6]. As discussed above regarding the Examiner's "enablement" rejections of claims 1, 9, and 25, the specification is replete with discussions of compression and packing. As should be

[6] Appellants note that this rejection is not actually a rejection for indefiniteness as stated by the Examiner, but instead appears to be a rejection under 35 U.S.C. § 112, ¶ 1.

appreciated by those skilled in the art, compression and packing has the effect of reducing the size of data. Thus, this feature is clearly supported by the specification. Further, the identified language is clearly definite as its scope is readily ascertained by those skilled in the art, namely compression that reduces the size of data. Appellants also note that the identified language was added only after the Examiner refused to give "compression" its ordinary and customary meaning as defined and used in the specification.

The Examiner also takes issue with the recited phrase "original sizes." Appellants' specification explicitly teaches compression and packing of the coordinate data, as evidenced by the specific citations supplied above. Appellants assert that a person skilled in the art would not find the claimed "original sizes" to be indefinite because compression is known in the art to be the reduction in size of data from an original size to some other size. Consequently, the "original sizes" limitation is not indefinite as one skilled in the art could easily ascertain the original size of uncompressed data.

The Examiner also asserts that the phase "at least a portion of the activation data" is indefinite. Appellants respectfully disagree, "at least a portion of" is definite as it would be understood by all skilled in the art to mean any amount of the activation data. Claims including "at least a portion of" can be found in at least 146,260 patents issued since 1976. The Examiner has not identified any competent authority which holds that "at least a portion of" limitations are indefinite (May 16, 2006, Office action, page 18). For these reasons, the "at least a portion of" limitation is not indefinite.

ii. Dependent claim 3

Claim 3 was rejected on the basis of its use of "delta size" and "optimal size." These phrases are not indefinite and their scope would be readily ascertained by those skilled in the art. "Delta size" and "optimal size" are known to those skilled in the art, as is how to determine their metes and bounds, as demonstrated by the U.S. patent incorporated by reference in the specification (U.S. Patent No. 5,995,970).

iii. Dependent claim 4

Dependent claim 4 was rejected for its use of the term "special data." Applications note that special data is discussed and defined in the specification at page 17, lines 2-4, such that the metes and bounds of "special data" would be readily ascertained by those skilled in the art. Further, Appellants note that claim 4 no longer includes the modifier "special" in front of data, due to the March 2, 2006, Amendment. Thus, the Examiner's rejection of claim 4 appears to be an error resulting from the cutting-and-pasting of previous rejections.

iv. Independent claim 9

Claim 9 was also rejected because it appears the Examiner finds the clause "at least three dimensional data is associated with the navigation data and activation data, and wherein each one of the at least three dimensional data is associated with a portion of the activation data" to be ambiguous and repetitive. Appellants assert that it is not ambiguous because each dimension is associated with a portion of the activation data and that can be resolved on a plain reading of the claim language. Thus, the scope of claim 9 would be readily ascertained by those skilled in the art.

v. Dependent claim 11

Claim 11 was rejected on the basis that "the activation data" lacks proper antecedent basis. Claim 11 depends from claim 9 and claim 9 introduced the phrase "activation data." Thus, claim 11 is not indefinite.

vi. Independent claim 25

Claim 25 was also rejected for the use of the terms "portions", "original", and "larger." Claim 25's correct usage of the terms "portions" and "original" have been addressed above and "larger" is not indefinite because it is used within the context of "larger than compressed sizes." One skilled in the art would be able to readily ascertain the meaning of "larger than compressed sizes" as recited in the claim.

Further, it appears that the Examiner's rejection of claim 25 is included within the May 16, 2006, Office action as an accident resulting from over-zealous cutting-and-pasting of previous rejections. Specifically, the phrase "larger and original sizes" was previously modified in an amendment to "their original sizes" and "larger" was reintroduced within the context of "larger than compressed sizes." In view of this the term larger has definiteness when used in connection with "than compressed sizes." Thus, the Examiner's rejection is improper.

vi. Claims 25 and 27

Claim 25 and 27 were rejected apparently because the Appellants used two different phases in which navigation data included something different—namely control data and attribute data. No ambiguity or indefiniteness results from this usage as the open-ended term "included" is used and the navigation data can include both control data

and attribute data. Thus, the Examiner's rejection is improper as the scope of claims 25 and 27 is readily apparent.

vii. Dependent claims 30-32

Claims 30-32 were rejected, in part, because they recite "a portion" or "a part." In a similar manner to the "at least a portion" limitation discussed above regarding independent claims 1, 9, and 25, the usage of "a portion" or "a part" is not indefinite because such usage clearly refers to any portion or part of the related elements. The Examiner has not identified any competent authority which holds that such limitations are indefinite.

The Examiner also asserts that the phrase "the decompressed matched portions" lacks antecedent basis. Appellants disagree because claim 32 depends from claim 25 and claim 25 includes decompressed and matched portions of navigation data. Consequently, the Examiner's rejections of claims 30-32 for being indefinite are improper.

B. The Examiner's obviousness rejections under 35 U.S.C. § 103

The Examiner rejected all pending claims as being obvious in view of the combination of Ito and Friederich. As is discussed at length below, the Examiner has failed to establish a *prima facie* case of obviousness as Ito and Friederich, in any combination, do not disclose or suggest compressing coordinate data using activation data, as is recited in all independent claims. Instead, the Examiner's combination indiscriminately compresses all data within a parcel and not according to activation data.

1. The Examiner's burden in establishing a *prima facie* case of obviousness

Obviousness can be a problematic basis for rejection because the Examiner, in deciding that a feature is obvious, has the benefit of the applicant's disclosure as a blueprint and guide, in which light even an exceedingly complex solution may seem easy or obvious. In contrast, one with ordinary skill in the art would have no such guide. Furthermore, once an obviousness rejection has been made, the applicant is in the exceedingly difficult position of having to prove a negative proposition (i.e., non-obviousness) in order to overcome the rejection.

For these reasons, the law places upon the Examiner the initial burden of establishing a *prima facie* case of obviousness. If the Examiner fails to establish the requisite *prima facie* case, the rejection is improper and will be overturned. *In re Rijckaert,* 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955 (Fed. Cir. 1993). Only if the Examiner's burden is met does the burden shift to the Applicant to provide evidence to refute the rejection.

In meeting this initial burden, the Examiner "cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine,* 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Thus, the Examiner is required to perform the "critical step" of casting his or her mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. *See, e.g., W. L. Gore & Assoc., Inc. v. Garlock, Inc.,* 721 F.2d 1540, 1553, 220 U.S.P.Q. 303 (Fed. Cir. 1983).

Rejections on obviousness grounds also cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *In re Kahn,* 441 F.3d 977, 988, 78 U.S.P.Q.2d 1329 (Fed. Cir. 2006). The factual inquiry performed by the Examiner in issuing an obviousness rejection must be thorough and searching. *McGinley v. Franklin Sports, Inc.,* 262 F.3d 1339, 1351-52, 60 U.S.P.Q.2d 1001 (Fed. Cir. 2001). The prohibition against conclusory examination is as much rooted in the Administrative Procedure Act, which ensures due process and non-arbitrary decision-making, as it is in § 103. *In re Kahn*, 441 F.3d at 988.

Three criteria must be satisfied by the Examiner in order to establish a prima facie case of obviousness: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine their teachings; (2) there must be a reasonable expectation of success; and (3) the combination of references must teach or suggest all the claim limitations. *See* MPEP § 706.02(j), *citing In re Vaeck,* 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). This "motivation-suggestion-teaching" requirement protects against the entry of hindsight into the obviousness analysis, a problem which § 103 was meant to confront. *In re Kahn,* 441 F.3d at 988.

Consequently, an Examiner's mere identification in the prior art of each individual element claimed is insufficient to defeat the patentability of a claimed invention without a proper suggestion to combine or modify the elements. *In re Rouffet,* 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998). The fact that references can be combined or modified does not render the resultant combination obvious unless the

prior art also suggests the desirability of the combination. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125 (Fed. Cir. 1984).

In presenting the suggestion or motivation to combine prior art references, the Examiner may not resort to broad and conclusory statements; as such statements are not "evidence" of anything. *In re Kotzab,* 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000). The suggestion to make the claimed combination must be found in the prior art, not in the applicant's disclosure. *In re Vaeck,* 947 F.2d at 490. If the Examiner's proposed combination renders the prior art invention unsatisfactory for its intended purpose, or changes its principal of operation, there can be no suggestion or motivation to form the combination—and thus no *prima facie* case of obviousness. *See* MPEP § 2143.01*; In re Gordon*, 733 F.2d at 902.

2. Summary of the Examiner's references

Each of the Examiner's obviousness rejections is based on the combination of at least Ito (U.S. Patent No. 6,484,093) and Friederich (U.S. Patent No. 6,600,841).

Ito discloses techniques for communicating route guidance to mobile units. The mobile units include road data. Furthermore, the mobile units communicate with an information center for acquiring updated road data and route guidance. A drive route, which is associated with route guidance, is divided into route segments (FIG. 4A and 4B; col. 10, lines 5-7). Each route segment includes a header, crossing information, road information, and other metadata (col. 10 lines 9-11). A route is divided into segments so that the mobile units do not have to store each segment of the route to guide a driver at

any particular point in time; rather, each segment can be acquired as needed from the information center by the mobile units (col. 10, lines 11-39).

Friederich discloses a geographic feature database that includes 3-dimensional coordinate data comprising latitude, longitude, and altitude (col 7, ll. 50-55). Friederich also generally discloses compressing geographic data, including the compression of 3-dimensional coordinate data (col. 20, ll. 22-40). Friederich organizes geographic data into "parcels" such that the navigation devices retrieves relevant parcels based on their current geographic location (col. 12, ll. 45-55). Each parcel is sized to correspond to the quantity of data that can be accessed in a single disk access, such as a 16 kB parcel corresponding to a CD (col. 12, ll. 55-61). Friederich's geographic data is compressed in a manner that maintains the organization of the parcels (col. 18, ll. 25-28). Thus, for compression and decompression, all data within a parcel (regarding of the dimensions of the coordinate data) is compressed or decompressed on the fly (col. 32, l. 66, through col. 33, l. 18).

3. The Examiner's obviousness rejections of claims 1, 2, 6-12, and 25-32

The Examiner's obviousness rejections of claims 1, 2, 6-12, and 25-32 are each based on the combination of Ito and Friederich. The Examiner contends that various limitations within these claims need not be considered because they are not "structural" and that when stripped of these limitations, the claims are obvious in view of Ito and Friederich.

i. The limitations of claims 1, 2, 6-12, and 25-32 must be given patentable weight

Independent claims 1, 9, and 25 each positively recite "compression and decompression instructions" that are used by the device to perform a specifically claimed type of compression and data association. These features are recited in the fifth paragraph of claim 1, reproduced below as follows:

> wherein the device uses the memory in cooperation with the processor and the compression and decompression instructions to compress a plurality of coordinate data into reduced sizes relative to original sizes of the coordinate data and associate at least a portion of activation data with each coordinate data, each coordinate data having three or more dimensions and each portion of the activation data identifying one of the three or more dimensions; and

The Examiner contends that these limitations, and other similar limitations recited in the other claims, need not be given patentable weight because they are "statements of desired use" (May 16, 2006, Office action, page 8). The Examiner cites MPEP § 2114 for the basis that statements of desired use are not entitled to patentable weight.

The Examiner is correct in that MPEP § 2114 disparages the use of "desired use" limitations, but takes the instructions of § 2114 beyond their intended meaning. In particular, the Examiner's overly-broad interpretation of MPEP § 2114, and reliance on cases that predate modern Supreme Court and Federal Circuit jurisprudence, would render all computer-software inventions unpatentable subject matter as computer software is typically implemented utilizing conventional hardware, including a processor and a memory.

Further, the portions of the independent claims that the Examiner identifies as being a statement of "desired use" are not a recitation of intent or desire, but instead clearly recite that the device uses (i.e. is operable to use) the compression instructions in

a particular manner. Thus, the reproduced portion of claim 1, along with the similar portions of the other independent claims, are functional limitations entitled to patentable weight.

The Federal Circuit has held that functional limitations are, "of course," additional limitations on the claims that are entitled to patentable weight because functional limitations tell us "something about the structural requirements" of the recited elements. *K-2 Corp. v. Salomon S.A.,* 191 F.3d 1356, 1363, 52 U.S.P.Q.2d 1001 (Fed. Cir. 2001); see also *Wright Medical Technology, Inc., v. Osteonics Corp.,* 122 F.3d 1440, 1443-44, 43 U.S.P.Q.2d 1837 (Fed. Cir. 1997) (functional language analyzed as a claim limitation); *R.A.C.C. Industries, Inc. v. Stun-Tech, Inc.*, 178 F.3d 1309 (Table) (Fed. Cir. 1998) (functional language is a limitation on the scope of the claims). Where the Federal Circuit has found functional limitations to not be of patentable weight, it has done so because the functional limitations were inherent in the prior art. See *In re Schreiber,* 128 F.3d 1473, 1478 (Fed. Cir. 1997).

Here, the functional limitations of claim 1 are not inherent in the prior art—that is, not all compression instructions perform the recited functions. Instead, the functional limitations of claim 1 illuminate the structural requirements of the recited processor, memory, display, and instructions. Appellants' use of functional limitations to define the claimed invention is entirely appropriate. *In re Schreiber*, 128 F.3d at 1478 ("[a] patent applicant is free to recite features of an apparatus either structurally or functionally"). Accordingly, the functional limitations of all pending claims must be given patentable weight.

ii. The Examiner's combination does not disclose or suggest all claimed features of the present invention

When the functional limitations of the independent claims are given patentable weight as required by Federal Circuit precedent, it is clear that the Examiner's combination does not disclose or suggest all limitations recited in the independent claims. The Examiner's combination of Ito and Friederich, even when indiscriminately formed, does not disclose or suggest the claimed N-dimensional compression and association functions of the present invention. In particular, the Examiner's combination does not disclose or suggest compressing coordinate data using activation data, as is recited in all pending claims[7].

Appellants' specification discloses that it is known in the art to pack (compress) two-dimensional coordinate data, such as coordinate data corresponding to latitude and longitude (page 2, lines 19-23). In contrast, the claimed invention recites packing (compressing) three-dimensional coordinate data using activation data, thereby further reducing the size of coordinate data used by various navigation and computing devices (page 27, lines 1-9).

N-dimensional coordinate data is known in the art (where N is greater than 2) and Appellants do not dispute that the Examiner would be able to locate a reference showing N-dimensional coordinate data[8]. However, Ito does not expressly disclose or suggest coordinate data and the Examiner appears to misunderstand that nature of the coordinate data claimed and disclosed by the present application.

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[7] Independent claim 25 recites "control data" instead of "activation data".

[8] The present invention is generally directed at compressing N-dimensional coordinate data, not at the existence of N-dimensional coordinate data itself. Friederich discloses N-dimensional coordinate data as is discussed below in detail, although the Examiner does not assert such.

Coordinate data is discussed throughout the specification, but page 2, lines 4-18, provide an exemplary discussion of coordinate data:

> In a variety of applications, geographic features are typically represented by coordinate sets and stored in data stores in the form of bits representing the coordinate information. The coordinate information often requires a large amount of storage space on the medium that is used to store it. This presents a significant problem and becomes particularly undesirable when the storage medium has limited storage capacity . . .

The coordinate data recited in the claims thus corresponds to data that indicates the representation of geographic features (the feature's latitude, longitude, height, depth, altitude, landmark information, weather information, etc). Thus, coordinate data corresponds to data that defines the location of various geographic features, rather than a GPS device's current location.

As should be appreciated, the coordinate data for an entire region, such as the state of New York, would include information corresponding to thousands of roads, buildings, waterways, airports, etc—potentially occupying a large amount of memory. The present invention seeks to compress (pack) this N-dimensional coordinate data to reduce the amount of memory it occupies.

The Examiner contends that Ito, col. 8, discloses N-dimensional coordinate data and that GPS devices inherently use N-dimensional coordinate data (May 16, 2006, Office action, page 7). Although N-dimensional data is known in the art (see above), the Examiner's discussion of N-dimensional coordinate data is inaccurate and likely underlines the many irregular and unsupported rejections discussed herein.

In particular, the Examiner seems to conclude that the N-dimensional coordinate data utilized by the present invention corresponds to the three-dimensional location

computed by a navigation device to indicate the device's current location. The portions of Ito cited by the Examiner correspond to the three-dimensional location of the navigation unit, and not coordinate data corresponding to geographic features such as roads. As discussed above, this characterization of the claimed coordinate data is incorrect.

Although this oversight by the Examiner may appear insignificant, this mischaracterization of coordinate data reveals that the Examiner's obviousness rejections are without merit, as is discussed in more detail below. The Examiner's mischaracterization also perhaps demonstrates why he thinks that the claimed invention is not enabled—as there is little need to compress data that indicates a navigation device's current three-dimensional location.

In any case, Ito does not disclose or suggest compression of any sort, let alone compression of undisclosed N-dimensional coordinate data since, as discussed above, Ito does not disclose such data. The Examiner states he "believes" that Ito somehow discloses compression of coordinate data (May 16, 2006, Office action, page 7), but concedes that his hunches are not sufficient to support a *prima facie* case of obviousness.

Thus, the Examiner points to the teachings of Friederich to show the compression of N-dimensional coordinate data. Appellants note that compression of 2-dimensional coordinate data is known in the art, as evidenced by the background of the invention section of Appellants' specification[9].

As discussed above, Appellants invention is directed at the compression of N-dimensional coordinate data (where N > 2) using activation data that identifies dimensions for each coordinate. As recited in the independent claims, portions of the

[9] See U.S. Patent No. 5,995,970, incorporated by reference on page 17 of the specification.

activation data are associated with the coordinate data to identify the various dimensions of the coordinate data. The activation data is used to identify which dimensions are in use, and thus which dimensions should be compressed or decompressed (page 17, line 23, through page 18, line 9). Such a configuration advantageously allows embodiments of the present invention to conserve processor and memory resources by compressing and decompressing only the coordinate data dimensions that are currently being used by the device.

Friederich discloses the use of 3-dimensional coordinate data including latitude, longitude, and altitude (col 7, ll. 50-55). Friederich also generally discloses compressing geographic data, including the compression of 3-dimensional coordinate data (col. 20, ll. 22-40). However, in contrast to the claimed invention, Friederich does not use activation data to facilitate compression of coordinate data. Instead, Friederich compresses all data that is stored in the memory and does not use activation data to selectively decompress (activate) dimensional coordinate data.

Friederich organizes geographic data into "parcels" such that the navigation device retrieves relevant parcels based on its current geographic location (col. 12, ll. 45-55). Each parcel is sized to correspond to the quantity of data that can be accessed in a single disk access, such as a 16 kB parcel corresponding to a CD (col. 12, ll. 55-61). Friederich's geographic data is compressed in a manner that maintains the organization of the parcels (col. 18, ll. 25-28). Thus, for compression and decompression, all data within a parcel (regarding of the dimensions of the coordinate data) is compressed or decompressed on the fly (col. 32, l. 66, through col. 33, l. 18).

Consequently, Friederich does not disclose or suggest the compression or decompression of N-dimensional coordinate data using activation data. Instead, Friederich compresses data using parcelization—a process that is not the same or related to the claimed invention's use of activation data. Thus, in contrast to Friederich, embodiments of the present invention are not required to parcel coordinate data into small amounts, as activation data is used to ensure that only relevant coordinate data dimensions are compressed or decompressed.

Thus, Friederich and Ito, in any combination, do not disclose or suggest all features recited in the independent claims.

iii. There is no suggestion or motivation to combine Ito and Friederich

Appellants note that the Examiner has also failed to form a *prima facie* case of obviousness because there is no motivation or suggestion to combine Ito and Friederich. Ito specifically addresses the volume of data in a manner that does not require compression. That is, Ito splits the data up and delivers it on demand as needed to the device. In contrast, Friederich supplies all the data using Huffman-based compression with substitution strings.

One of ordinary skill in the art would not have been motivated to combine these references because the processing of Ito would be slowed by compressing the data in parcels as taught by Friederich. Combining the approaches of Ito and Friederich would result in an increase in processing latency and defeat the very purposes for which both inventions stand. Accordingly, Appellants respectfully submit that there is no suggestion or motivation to combine Ito and Friederich as stated by the Examiner.

4. The Examiner's obviousness rejections of claims 3-5

Claims 3-5 depend from independent claim 1, which is discussed above at length. Appellants respectfully submit that claims 3-5 are allowable for the same reasons discussed above regarding independent claim 1.

D. Conclusion

The Examiner's § 112 rejections are without merit as all claimed features of the present invention are fully enabled, supported by the specification, and clear in scope to those skilled in the art. Further, the Examiner has failed to establish a *prima facie* case of obviousness as the Examiner's combination does not disclose or suggest compression using activation data.

Accordingly, reversal of the Examiner's rejections is proper, and such favorable action is solicited.

Respectfully submitted,

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VII. Claims Appendix

1. A navigation device, comprising:

a processor;

a memory in communication with the processor;

a display in communication with the processor;

compression and decompression instructions embedded on the processor;

wherein the device uses the memory in cooperation with the processor and the compression and decompression instructions to compress a plurality of coordinate data into reduced sizes relative to original sizes of the coordinate data and associate at least a portion of activation data with each coordinate data, each coordinate data having three or more dimensions and each portion of the activation data identifying one of the three or more dimensions; and

wherein at least a portion of the coordinate data is dynamically communicated to the display

2. The device of claim 1, further comprising an interface device operable to audibly communicate at least a portion of the coordinate data.

3. The device of claim 1, wherein each dimension includes a coordinate change value relative to a previous coordinate's direction and the coordinate change is identified as a desired size for which to compress each coordinate data.

4. The device of claim 3, wherein at least one of the coordinate data exceed the change value associated with compressing the at least one coordinate data and wherein associating one or more escape data character sequences to ensure the at least one coordinate data are compressed-within the desired size associated with the coordinate data.

5. The device of claim 4, wherein:

each dimension is associated with a direction; and

if each direction within each dimension of each associated coordinate data proceeds in a same direction then using a single sign data for each dimension to compress each coordinate data.

6. The device of claim 1, wherein at least one of the dimensions is associated with attribute data relating to at least one of the other dimensions.

7. The device of claim 1, wherein the device is a handheld portable device.

8. The device of claim 1, wherein the memory is remote from the processor.

9. A navigation system, comprising:

a mass storage device adapted to store navigation data;

a server adapted to communicate with the mass storage;

compression and decompression instructions embedded on a processor of a navigation device; and

the navigation device adapted to communicate with and retrieve navigation data from the server via a communication channel, wherein the navigation device includes ~~a~~ the processor in communication with a memory, wherein the compression and decompression instructions of the processor and memory cooperate to compress at least three dimensional data into reduced sizes relative to original sizes associated with the at least three dimensional data, and wherein the at least three dimensional data is associated with the navigation data and activation data, and wherein each one of the at least three dimensional data is associated with a portion of the activation data.

10. The system of claim 9, wherein the communication channel includes a wireless channel.

11. The system of claim 9, wherein the activation data are configurable to activate or deactivate each dimension within the at least three dimensional data of the navigation data.

12. The system of claim 11, wherein the navigation data are compressed within the memory.

13-24. (Canceled).

25. A navigational device, comprising:

compression and decompression instructions embedded in a processor;

the processor that cooperates with the memory using the compression and decompression instructions to compress navigation data having three or more dimensions wherein the navigation data includes control data and coordinate data, wherein each unique portion of the control data maps to one of the three or more dimensions; and

a Global Positioning Satellite (GPS) receiver that cooperates with the processor and provides to the processor specific values for coordinate data, wherein the processor maps the specific values with portions of the compressed navigation data using the control data and dynamically decompresses those mapped portions into their original sizes, which is larger than compressed sizes, and communicates the decompressed matched portions to the display.

26. The navigational device of claim 25, wherein the navigation device is a portable digital assistant.

27. The navigation device of claim 25, wherein the navigation data includes attribute data within one or more of the three or more dimensions, and wherein the attribute data drives presentation effects of the decompressed matched portions on the display.

28. The navigation device of claim 25, wherein the navigational device transmits the decompressed matched portions to an external device.

29. The navigational device of claim 25, wherein each of the three or more dimensions include cartographic data.

30. The navigational device of claim 25, wherein the decompressed match portions represent in least in part a current position of the device within a route that the device is traveling along.

31. The navigational device of claim 25 further comprising an audio device in cooperation with the processor, wherein the audio device communicates at least a part of the decompressed matched portions audibly.

32. The navigational device of claim 25 wherein at least one of the three or more dimensions associated with the decompressed matched portions includes landmark data proximate to the navigational device.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.